

ADDITIONS AND CORRECTIONS TO A LIST OF MONTANA STONEFLIES¹

Arden R. Gaufin² and W.E. Ricker³

ABSTRACT: Questionable Montana distribution records are reviewed and new state records are given. *Nemoura venusta* Banks and *Eucapnopsis vedderensis* Ricker are removed from the list but the addition of *Capnia cheama* Ricker and *Brachyptera fosketti* Ricker leaves the list of Montana stoneflies at 119. Close examination of *Nemoura (Soyedina) nevadensis interrupta* Claassen showed it to be similar enough to the eastern *Nemoura washingtoni* Claassen and *Nemoura vallicularia* Wu to justify recognition of a new species *Nemoura (Soyedina) potteri* Baumann and Gaufin for Montana. A detailed study of *Leuctra (Paraleuctra) sara* Jewett pointed out that the western specimens of this species were so different from the eastern *sara*, as to justify the renaming of the western taxon.

DESCRIPTORS: Plecoptera, holotype, allotype, paratype, lectotype, distribution.

The notes to follow supplement the recent "Stoneflies (Plecoptera) of Montana," by A.R. Gaufin, W.E. Ricker, Michael Miner, Paul Milam and R.A. Hays (Trans. Am. Ent. Soc. 98:1-161, 1972).

4. *Nemoura (Amphinemura) venusta* Banks

This species should be deleted from the list on page 14. All past records of *venusta* from Montana prove to be *banksi* (Baumann and Gaufin) (cf. p. 30).

13. *Nemoura (Soyedina) nevadensis interrupta* Claassen

This species should be deleted from the list on page 15. Specimens from Montana identified as *Nemoura nevadensis interrupta* have been found to be more similar to the eastern *Nemoura washingtoni* Claassen and *Nemoura vallicularia* Wu but are different enough to justify recognition as a new species, *Nemoura (Soyedina) potteri* Baumann and Gaufin (cf. p. 38).

26. *Paraleuctra vershina* Gaufin and Ricker (new species)

1925 *Leuctra occidentalis* Needham and Claassen, Monogr. Plecop., p. 231 (not *occidentalis* Banks 1907, Can. Ent. 39:329).

1925 *Leuctra occidentalis* Dodds and Hisaw, Ecol. 6(4):382.

1929 *Leuctra occidentalis* Neave, Contr. Can. Biol. Fish., N.S. 4(13):162.

¹ Accepted for publication: July 11, 1974

² Department of Biology, University of Utah, Salt Lake City, Utah 84112

³ Fisheries Research Board of Canada, Nanaimo, B.C.

- 1934 *Leuctra occidentalis* Neave, Can. Ent. 66:2.
 1938 *Leuctra occidentalis* Hoppe, Univ. Wash. Publ. Biol. 4(2):163.
 1938 *Leuctra occidentalis* Knowlton and Harmston, Ent. News 49:285.
 1939 *Leuctra occidentalis* Castle, Can. Ent. 71:209.
 1939 *Leuctra occidentalis* Ricker, Proc. Ent. Soc. British Columbia, 35:22.
 1940 *Leuctra occidentalis* Claassen, Cornell Univ. Agr. Exp. Sta. Memoir 232:84 (in part).
 1941 *Paraleuctra occidentalis* Hanson, Bull. Brooklyn Ent. Soc. 36(2):57-58.
 1942 *Leuctra occidentalis* Frison, Bull. Illinois Nat. Hist. Surv. 22(2):259.
 1943 *Leuctra (Paraleuctra) occidentalis* Ricker, Indiana Univ. Publ., Sci. Ser. 12:77.
 1952 *Leuctra (Paraleuctra) occidentalis* Ricker, Indiana Univ. Publ., Sci. Ser. 18:172 (in part). A lectotype of *occidentalis* Banks 1907 was designated, but it was misidentified with *occidentalis* auctores.
 1954 *Leuctra (Paraleuctra) sara* Ricker, Proc. Ent. Soc. British Columbia 51:38 (not *sara* Claassen 1937, J. Kansas Ent. Soc. 10:44).
 1955 *Leuctra (Paraleuctra) occidentalis* Gaufin, Proc. Utah Acad. 32:118.
 1956 *Leuctra (Paraleuctra) sara* Jewett, Aquatic Insects of Calif. p. 169.
 1959 *Leuctra (Paraleuctra) sara* Jewett, Oregon State Monogr., Studies Ent. 3:39.
 1960 *Leuctra (Paraleuctra) sara* Jewett, Bull. Calif. Insect. Surv. 6(6):141.
 1962 *Paraleuctra "occidentalis auct."* Hanson, Bull. Brooklyn Ent. Soc. 36:64.
 1964 *Leuctra (Paraleuctra) sara* Gaufin, Proc. Utah Acad. 41(2):223.
 1964 *Leuctra (Paraleuctra) sara* Ricker (in part), Gewasser and Abwasser 34/35:fig. 16.
 The dots west of the plains all refer to *vershina*.
 1966 *Paraleuctra sara* Gaufin, Nebeker and Sessions, Univ. Utah Biol. Ser. 14(1):42.
 1966 *Paraleuctra occidentalis* Illies, Tierreich 82:114 (in part).
 1966 *Paraleuctra sara* Illies, Tierreich 82:115 (in part).
 1967 *Leuctra sara* Sheldon and Jewett, Pan-Pac. Ent. 43(1):4.
 1972 *Leuctra (Paraleuctra) sara* Gaufin et al., Trans. Am. Ent. Soc. 98:52.

In the past this frequently-collected species has been reported using names that properly belong to two other species: *occidentalis* Banks and *sara* Claassen. Ricker (1954) showed that the type of *occidentalis* Banks is the same as *bradleyi* Claassen, but mistakenly applied the name *sara* Claassen to what most authors had been calling *occidentalis*. Hanson (1962) pointed out that the western specimens so named were different from eastern *sara*, but unfortunately he refrained from naming the western taxon.

A fresh description of this species seems unnecessary. Needham and Claassen's (1925) description and illustrations (as *Leuctra occidentalis*) are adequate, and Hanson (1962, p. 136) has two views of the male cercus. The species has also been illustrated by Jewett (1956, 1959, 1960) and by Gaufin et al. (1966, 1972), under the names indicated above.

A key to separate male *vershina* from its two closest relatives is as follows:

1a. Basal body of the cercus much deeper than long, subrectangular, with a spine at the upper and lower posterior corners, these approximately equal in length; the upper spine lacks any protuberance, but a short spur or callus is present on the hind margin of the basal body near that spine; lower spine with a callus on its mesal surface near its base; western *forcipata* Frison

1b. Basal body of the cercus no deeper than long, lacking any hind margin that appears distinct from the two spines, which meet each other at an obtuse angle; upper spine always with a spur or callus on its hind margin 2

2a. Lower spine of the cercus always much shorter than the upper, and lacking any spur or callus; the spur on the upper spine closer to the tip of the spine than to its base; western *vershina* n. sp.

2b. The two spines of the cercus almost or quite equal in length (the upper usually slightly longer); a spur or callus present on the hind margin of the upper spine, about midway between tip and base; a callus present on the mesal surface of the lower spine near its base; eastern *sara* Claassen

The females of these three species are very similar.

Paraleuctra vershina

Holotype ♂, allotype ♀ and 1 male and 7 female paratypes City Creek, Salt Lake County, Utah, 10-VI-1965, R.W. Baumann (USNM). Paratypes: COLORADO: Delta Co., stream at Grand Mesa, 27-VI-1961, S.G. Jewett, Jr., 1♂, 7♀♀ (USNM). Eagle Co., Eagle River, Hwy 24, above Minturn, 29-VI-1962, 1♂, 1♀ (USNM). La Plata Co., Lime Creek, Purgatory Campground, 24-VI-1961, S. G. Jewett, Jr., 2♂♂, 10♀♀ (USNM). Routt Co., Rocky Creek, 1 mile from Fish Creek Falls, 17-VI-1968, B. R. Oblad, 12♂♂ 6♀♀ (USNM); Yampa River, Steamboat Springs, 26-VI-1968, B. R. Oblad, 8♂♂, 5♀♀ (USNM). IDAHO: Custer Co., Valley Creek, Stanley, 17-VI-1964, 25♂♂, 33♀♀ (USNM). NEW MEXICO: San Miguel Co., Holy Ghost Creek, near Tererro, 19-VI-1961, S. G. Jewett, Jr., 23♂♂, 31♀♀ (USNM); Pecos River, near Field Tract Campground, 18 to 20-VI-1961, S. G. Jewett, Jr., 2♂♂, 2♀♀ (USNM). Santa Fe Co., Sante Fe Basin Ski Area, 18-VI-1961, S. G. Jewett, Jr., 2♂♂, 4♀♀ (USNM). UTAH: Davis Co., Mueller Park, 28-V-1948, D. Merkley, 1♂, 4♀♀ (USNM) Salt Lake Co., Big Cottonwood Creek, 14-V-1965, A. V. Nebeker, 1♂ (USNM); 4-VIII-1965, A. V. Nebeker, 3♂♂, 2♀♀ (USNM); 16-V-1966, R. W. Baumann, 11♂♂, 4♀♀ (USNM); City Creek, Rotary Park, 15-V-1966, D. Uresk, 7♂♂, 5♀♀ (USNM). WYOMING: Fremont Co., Willow Creek, near South Pass, 20-VIII-1967, R. W. Baumann, 7♂♂, 9♀♀ (USNM). Sublette Co., Surveyor Creek, above Half Moon Lake, 18-VII-1967, R. W. Baumann, 3♂♂, 3♀♀ (USNM), Teton Co., Cottonwood Creek, Teton National Forest, 19-VII-1967, R. W. Baumann, 2♂♂, 2♀♀ (USNM); Pacific Creek, Hwy 89, 1 mile NW Moran, 19-VII, 1967, R. W. Baumann, 1♂, 7♀♀ (USNM); river draining Jenny Lake, 19-VII-1967, R. W. Baumann, 3♂♂, 13♀♀ (USNM). Holotype ♂, #72944 and allotype ♀ deposited at the United States National Museum, Washington, D.C.

36. *Capnia (Capnia) limata* Frison

The name *Capnia limata* has been given to specimens from the western United States, while the name *Capnia vernalis* (Newport) has been used in Canada and the northeastern United States. After careful examination of both type specimens, Baumann (1973) concluded that a single, widely separated species *Capnia vernalis* (Newport) was involved. This synonymy is recorded in Zwick (1973).

41. *Capnia (Capnia) projecta* Frison

As was indicated in the list of The Stoneflies of Montana, p. 69, no records of this species' presence in the state are known. However, its range and that of *Capnia porrecta* Jewett are such as to indicate that either or both are likely to be present in the farthest northwestern section of the state.

50. *Eucapnopsis vedderensis* Ricker

This is a duplication of no. 55, *Isocapnia vedderensis* (Ricker), and should be deleted from pages 16 and 76 and from figure 4. The Montana records on page 76 should be transferred to *Isocapnia vedderensis* on page 84.

110. *Alloperla (Sweltsa) occidentis* Frison

The Montana record for this species was based on a specimen taken near Missoula on July 7, 1950, by Borys Malkin, and identified by Mr. S. G. Jewett, Jr.

112. *Alloperla (Sweltsa) revelstoka* Jewett

The name of this species was misspelled as *revelstoki*.

The following species should be added to the list of Montana Stoneflies.

Capnia (Capnia) cheama Ricker

Montana, Lincoln Co., Kootenai River, 19-III-1970, R. L. Newell.

Brachyptera (Oemopteryx) fosketti Ricker

Treasure Co., Yellowstone River, 2 miles south of Hysham, 24-III-1966, J. R. Grierson; Custer Co., Yellowstone River at Miles City, 22-III-1973, Roemhild, 5♂, Dawson Co., Yellowstone River, Intake 22-III-1973, Roemhild, 8♂; Custer Co., Tongue River, 14 miles south of Miles City, 22-III-1973, Roemhild, 5♂.

With the removal of *Nemoura venusta* and *Eucapnopsis vedderensis*, but the addition of *Capnia cheama* and *Brachyptera fosketti*, the list of Montana stoneflies stands at 119, of which 117 have actually been collected. *Perlomyia utahensis* and *Capnia projecta* are listed as "probables" because of their occurrence in adjacent states.

LITERATURE CITED

- Baumann, R.W., and A.R. Gaufin. 1970. The *Capnia projecta* complex of Western North America (Plecoptera:Capniidae). Trans. Am. Ent. Soc. 96:435-468.
- Baumann, R.W., and A.R. Gaufin. 1971. New Species of *Nemoura* from Western North America (Plecoptera:Nemouridae). Pan-Pacific Ent. 47:270-278.
- Baumann, R.W., and A.R. Gaufin. 1972. The *Amphinemoura venusta* complex of Western North America (Plecoptera:Nemouridae). Contributions in Science. Natural History Museum, Los Angeles County, 226:1-16.
- Baumann, R.W. 1973. Studies on Utah Stoneflies (Plecoptera). Great Basin Naturalist 33(2):91-108.
- Gaufin, A.R., W.E. Ricker, M. Miner, P. Milam, R.A. Hays. 1972. The Stoneflies (Plecoptera) of Montana. Trans. Am. Ent. Soc. 98:1-161.
- Ricker, W.E. 1965. New Records and Descriptions of Plecoptera (Class Insecta). J. Fish. Res. Bd. Canada, Ottawa, 22(2):475-501.
- Zwick, P. 1973. Ordo Plecoptera:Phylogenetisches System and Katalog. Walter de Gruyter and Co., Berlin. 359-380.